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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/288,836	04/08/1999	WILLIAM W. MACY	042390.P7032	7923

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EXAMINER

LANIER, BENJAMIN E

ART UNIT	PAPER NUMBER
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2132

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/288,836

Applicant(s)

MACY ET AL.

Examiner

Benjamin E Lanier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's cancellation of claims 1 and 13-15, and amendment of claims 2, 3, and 6 are acknowledged.

### ***Response to Arguments***

2. Applicant's argument that the Vynne references does not teach the recovery of the claimed watermark is not persuasive because Vynne discloses that the watermark embedded in the first frame can later be retrieved (Col. 2, lines 37-63).

Applicant's argument that the Tewfik and Rhoads references do not teach producing a watermark based on a multiplicative result of a pseudo-random number sequence, an amplitude associated with a data block, a secondary data set is not persuasive because Tewfik discloses a method and apparatus for digital watermarking wherein a pseudo-random sequence acting as a watermark is generated based on two random keys (Abstract). One of the keys is based on the author representation that is based on the host digital data signal (Col. 3, lines 37-41) that the watermark is to be embedded (Abstract). Rhoads discloses a system for embedding robust identification codes (watermarks) in electronic, optical and physical media (video)(Col. 1, lines 12-15) wherein adding an n-bit value (second data set), which is an independent pseudo-random sequence (Col. 6, lines 49-51), onto an entire signal through the addition of a very low amplitude encodation signal that has the look of pure noise (Col. 5, lines 46-65). The n-bit code (second data set) is encoded onto the original signal by having each of the bit values multiply their corresponding individual embedded code signals (Col. 7, lines 18-26).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Vynne, U.S. Patent No. 5,960,081. Referring to claim 8, Vynne discloses a system and method for embedding a retrievable watermark into a video signal. This watermark is retrievable by detecting a change between a first frame and a subsequent second frame of video (Col. 2, lines 56-63).

Referring to claim 9, Vynne discloses generating a binary pseudo-random sequence using a seed (Col. 2, lines 51-53).

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tewfik, U.S. Patent No. 6,272,634, in view of Rhoads, U.S. Patent No. 5,768,426. Referring to claim 6, Tewfik discloses a method and apparatus for digital watermarking wherein a pseudo-random sequence acting as a watermark is generated based on two random keys (Abstract). One of the keys is based on the author representation that is based on the host digital data signal (Col. 3, lines 37-41) that the watermark is to be embedded (Abstract). Tewfik does not disclose computing a data block having an amplitude for the watermark, or computing a secondary data set having a predetermined signal value, or combining the previously mentioned to produce a watermark. Rhoads discloses a system for embedding robust identification codes (watermarks) in electronic, optical and physical media (video)(Col. 1, lines 12-15) wherein adding an n-bit value (second data set), which is an independent pseudo-random sequence (Col. 6, lines 49-51), onto an entire signal through the addition of a very low amplitude encodation signal that has the look of pure noise (Col. 5, lines 46-65). The n-bit code (second data set) is encoded onto the original signal by having each of the bit values multiply their corresponding individual embedded code signals (Col. 7, lines 18-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the embedding and retrieval of watermarks of Rhoads in the method and apparatus for digital watermarking of Tewfik in order to provide a system that produces a less noticeable embedded signal as taught in Rhoads (Col. 5, line 60 – Col. 6, lines 8).

Referring to claims 2-5, Tewfik discloses a method and apparatus for digital watermarking wherein a pseudo-random sequence acting as a watermark is generated based on two random keys (Abstract). One of the keys is based on the author representation that is based

on the host digital data signal (Col. 3, lines 37-41) that the watermark is to be embedded (Abstract). Tewfik does not disclose performing arithmetic operations on signal values to produce a plurality of resultant signal values, or determining sign bits of the resultant signal value and providing those sign bits as a portion of the pseudo-random number sequence. Rhoads discloses a graphics processing system wherein a mean signal value is used to search for suspect image. The original is subtracted from the suspect to give a difference signal or image. If the identification signal exists in the suspect picture, the amplitudes thus found will split into a polarity with positive amplitudes being assigned a '1' and negative amplitudes being assigned a '0', and random gaussian-like distribution of amplitudes are found (Col. 14, lines 35-65 & Fig. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the embedding and retrieval of watermarks of Rhoads in the method and apparatus for digital watermarking of Tewfik in order to provide a system that produces a less noticeable embedded signal as taught in Rhoads (Col. 5, line 60 – Col. 6, lines 8).

Referring to claim 7, Rhoads discloses the amplitude being determined by the aesthetic and informational considerations of each and every application using the present methodology (Col. 5, lines 60-62), which would include getting a difference between an original image and a suspect image (Col. 14, lines 35-65).

7. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vynne, U.S. Patent No. 5,960,081, in view of Leighton, U.S. Patent No. 5,949,885. Referring to claim 10, Vynne discloses a system and method for embedding a retrievable watermark into a video signal. This watermark is retrievable by detecting a change between a first frame and a subsequent second frame of video (Col. 2, lines 56-63). Vynne also discloses generating a binary

pseudo-random sequence using a seed (Col. 2, lines 51-53). Vynne does not disclose computing a sum of the difference between watermarked intensities between frames and corresponding elements of the pseudo-random number sequence. Leighton discloses adding the difference between several frames with value generated randomly (Col. 8, lines 45-58 & Col. 4, lines 56-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the change between the first frame and a subsequent second frame in Vynne with a value generated randomly in the procedure of Leighton in order to watermark each frame of a movie separately as taught in Leighton (Col. 9, lines 19-27)

Referring to claim 11, Leighton discloses multiplying a standard deviation (difference between frames) with a value generated randomly (Col. 8, lines 63-65).

Referring to claim 12, Leighton discloses subtracting the newly added value from claim 10 with the actual data set (Col. 8, lines 58-60).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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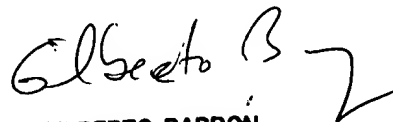
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin E Lanier whose telephone number is (703)-305-7684. The examiner can normally be reached on M-Th from 7:30am to 5:00pm, F from 7:30am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron, can be reached on (703)-305-1830. The fax phone number for the organization where this application or proceeding is assigned is (703)-746-7239, after final (703)-746-7238, or non-official/draft (703)-746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

  
GILBERTO BARRON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

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